The Delphion Integrated View: INPADOC Record

Title: **IL0122687A1: FUNGICIDAL FORMULATION OF TEBUCONAZOLE DILUTED IN WATER CONTAINING A CRYSTALLIZATION INHIBITING ROSIN DERIVATIVE AND PROCESS FOR PREVENTING THE CRYSTALLIZATION THEREOF**

Derwent Title: Crystallisation inhibition during spraying of fungicide solutions - consists of applying a tar product in solution containing tebuconazol [Derwent Record]

Country: IL Israel

Kind: **A1** Application Laid open to Publ. insp. [1] (See also: IL0122687A0)

High Resolution

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Gazette date	Code	Description (remarks) List all possible codes for IL
2008-01-22	KB +	Patents renewed
2005-03-20	KB +	Patents renewed
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Family:

PDF	Publication	Pub. Date	Filed	Title
☑	**IL0122687A1**	2003-11-23	1997-12-21	FUNGICIDAL FORMULATION OF TEBUCONAZOLE DILUTED IN WATER CONTAINING A CRYSTALLIZATION INHIBITING ROSIN DERIVATIVE AND PROCESS FOR PREVENTING THE CRYSTALLIZATION THEREOF
☑	IL0122687A0	1998-08-16	1997-12-21	Novel crystallization inhibitors
☑	BR9803583A	1999-10-05	1998-09-16	EMPREGO DE UM INIBIDOR DE CRISTALIZACAO DURANTE APLICACAO DE SOLUCOES AQUOSAS DE PULVERIZACAO CONTENDO O FUNGICIDA TEBUCONAZOL, PROCESSO PARA IMPEDIR A CRISTALIZACAO DO FUNGICIDA TEBUCONAZOL E FORMULACAO PESTICIDA DE TEBUCONAZOL
3 family members shown above				

Other Abstract Info: None

File No. 7015

STATE OF ISRAEL
PATENT OFFICE

מדינת ישראל
לשכת הפטנטים

חוק הפטנטים, התשכ"ז- 1967
Patents Law, 5727 - 1967

תעודת פטנט

CERTIFICATE OF PATENT

This is to certify that the following particulars have been recorded in the Register of Patents:

זאת לתעודה כי הפרטים דלהלן נרשמו בפנקס הפטנטים:

Patent No:	**122687**	**מס' הפטנט:**
Date of Application:	21/12/1997	תאריך הבקשה:
Title of Invention:		שם האמצאה:

FUNGICIDAL FORMULATION OF TEBUCONAZOLE DILUTED IN WATER CONTAINING A CRYSTALLIZATION INHIBITING ROSIN DERIVATIVE AND PROCESS FOR PREVENTING THE CRYSTALLIZATION THEREOF

פורמולצית קוטל-פטריות של טבוקונזול מדולל במים המכיל נגזרת רוזין מונעת התגבשות ותהליך למניעת התגבשותה

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Date of Publication:	01/12/1988	תאריך פרסום קיבול הבקשה:
Date of Grant:	08/12/2004	תאריך מתן פטנט:

תעודה זו הינה אישור כי דבר מתן הפטנט* נרשם בפנקס הפטנטים.

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וסימני המסחר

חוק הפטנטים, תשכ"ז-1967
Patent Law, 5727 - 1967

בקשה לפטנט
Application for Patent

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17

אני, (שם המבקש, מענו ולגבי גוף מאוגד - מקום התאגדותו)
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פורמולצית קוטל-פטריות של טבוקונזול מדולל במים המכיל נגזרת רחין מונעת התגבשות ותהליך למניעת התגבשותה

(באנגלית)
(English)
FUNGICIDAL FORMULATION OF TEBUCONAZOLE DILUTED IN WATER CONTAINING A CRYSTALLIZATION INHIBITING ROSIN DERIVATIVE AND PROCESS FOR PREVENTING THE CRYSTALLIZATION THEREOF

מבקש בזאת כי ינתן לי עליה פטנט
hereby apply for a patent to be granted to me in respect thereof.

*בקשת חלוקה - Application of Division	*בקשת פטנט מוסף - Application for Patent Addition	דרישה דין קדימה Priority Claim		
*מבקשת פטנט from Application	*לבקשה/לפטנט to Patent/Appl.	מספר/סימן Number/Mark	תאריך Date	מדינת האיגוד Convention Country
מס' No. _____	מס' No. _____			
מיום dated _____	מיום dated _____			

*יפוי כח: כללי / ~~מיוחד - רצוף בזה / עתיד ינוש~~
P.O.A.: general / ~~individual - attached / to be filed later~~

הוגש בענין IL 122964 filed in case

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חתימת המבקש
Signature of Applicant

היום 18 בחודש 12 שנת 1997
This of the year

For the Applicant
NOAM MUSHKIN
By:

לשימוש הלישכה

טופס זה כשהוא מוטבע בחותם לישכת הפטנטים ומושלם במספר ובתאריך ההגשה, הינו אישור להגשת הבקשה שפרטיה רשומים לעיל.
This form, impressed with the Seal of the Patent Office and indicating the number and date of filing, certifies the filing of the application the particulars of which are set out above.

*מחק את המיותר Delete whatever is inapplicable

פורמולצית קוטל-פטריות של טבוקונזול מדולל במים המכיל נגזרת רוזין מונעת התגבשות ותהליך למניעת התגבשותה

FUNGICIDAL FORMULATION OF TEBUCONAZOLE DILUTED IN WATER CONTAINING A CRYSTALLIZATION INHIBITING ROSIN DERIVATIVE AND PROCESS FOR PREVENTING THE CRYSTALLIZATION THEREOF

INTRODUCTION

The present invention relates to the new use of rosin and rosin derivatives for preventing the crystallization during application of aqueous spray liquors based on tebuconazole fungicidal active compound. The present invention more particularly concerns the use of rosin and rosin derivatives, to prevent the crystallization of the triazole fungicide, tebuconazole from certain of its formulations.

BACKGROUND OF THE INVENTION

Spray apparatuses which are usually employed for applying aqueous formulations of plant treatment agents contain several filters and nozzles. Thus, for example, there are suction filters between the suction component and tank pump, and furthermore pressure filters positioned in the pressure region downstream of the pump. Nozzle filters can also be present directly before the spray nozzles. All of these filters and the nozzles may be blocked to a greater or lesser extent by active compound which crystallizes out during application of aqueous spray liquors based on solid active compounds.

OBJECTIVES OF THE INVENTION

It is the objective of the present invention to provide a novel formulation for the fungicide tebuconazole which prevents the crystallization of the active ingredient upon dilution prior to its use as sprays. It is a further objective of the present invention to provide a formulation of tebuconazole with markedly improved properties with a much lower tendency to crystallize out than in previously reported formulations of tebuconazole.

SUMMARY OF THE INVENTION

We have found a new process for preventing the crystallization of the fungicide tebuconazole during the application of aqueous spray liquors thereof. The new process is characterized in that the crystallization inhibitor is chosen from the group consisting of rosin, rosin gum, hydrogenated rosin, and polymerized rosin gum. The new process yields a fungicide with markedly improved properties and with a much lower tendency to crystallize.

The ratio of crystallization inhibitor to tebuconazole fungicide of the new process is in the range of 0.05 to 25 to 5 to 20, preferably 0.1 to 5 to 2 to 15, and most preferably 0.1 to 1 to 1 to 10.

This invention further relates to a fungicidal formulation of tebuconazole diluted in water (aqueous spray liquor) containing a crystallization inhibitor selected from the group consisting of rosin, rosin gum, hydrogenated rosin and polymerized rosin. The new tebuconazole formulation is based on a ratio of crystallization inhibitor to tebuconazole in the range of 0.05 to 25 to 5 to 20, preferably 0.1 to 5 to 2 to 15, and most preferably 0.1 to 1 to 1 to 10.

This formulation may also contain various additives such as surface active substances, emulsifiers, polaric solvents with or without water, and the like. The formulations of the present invention are stable under the conventional testing conditions such as cold, hot and room storage conditions.

EXAMPLE 1

Formulation A containing 250 g/l of Tebuconazole having the following composition:

Tebuconazole tech 98.8%-	253 g
Surfactant sorprofor 14/R-	90 gr
Surfactant witconol NS-500-LQ-	80 gr
Gum Rosin pale w/w-	160 gr
Dipropylene glycol-	70 gr
Soft water-	120 gr
N-Methyl-Pyrrolidone(NMP)	up to 1000 ml

was prepared by the following procedure:

160 gr of gum rosin, 70 gr of dipropylene glycol, and 61 gr of NMP were mixed while being heated to approximately 100°c. The mixing continued until full solubilization of the rosin. Approximately 20 min after solubilization the solution was cooled to 50°c and to this solution the rest of the additives and the tech. tebuconazole were added. This mixture was stirred for an additional 20 min until a clear solution obtained.

A comparative formulation B having the following composition:

Tebuconazole tech 98.8%-	253 gr
surfactant soprofor 14/R-	90 gr
Surfactant witconol NS-500LQ-	80 gr
Dipropylene glycol-	70 gr
Soft water-	120 gr
NMP-	up to 1000 ml

Each of the above formulations were diluted in water to 0.5%. (CIPAC-D, equivalent to 342 ppm hardener and a temperature of 30°C) and stirred by magnetic stirrer at 300 r.p.m. for 30 minutes and then sieved on a 400 mesh screen. The aqueous emulsion according to Formulation A showed no crystals remaining on the screen while the aquous emulsion according to Formulation B had crystals which remained on the screen.

The emulsion stability of both above describe formulations were run by diluting with water to 0.5% without stirring keeping the temperature at 30°C in 100 ml cylinders. The two cylinders were allowed to stand without shaking or mixing for 2 hours. While the emulsion according to formulation A was free from sediment and crystals, the emulsion according to formulation B showed a considerable amount of needle-like crystals.

CLAIMS

1. A process for preventing the crystallization of the fungicide tebuconazole during the application of aqueous spray liquors characterized in that the crystallization inhibitor is chosen from the group consisting of rosin, rosin gum, hydrogenated rosin, and polymerized rosin.
2. A process according to Claim 1 wherein the ratio of crystallization inhibitor to tebuconazole fungicide is 0.05 to 25 to 5 to 20, preferably 0.1 to 5 to 2 to 15, and most preferably 0.1 to 1 to 1 to 10.
3. A fungicidal formulation of tebuconazole diluted in water (aqueous spray liquor) containing a crystallization inhibitor selected from the group consisting of rosin, rosin gum, hydrogenated rosin and polymerized rosin.
4. A formulation according to Claim 3 wherein the ratio of crystallization inhibitor to tebuconazole is 0.05 to 25 to 5 to 20, preferably 0.1 to 5 to 2 to 15, and most preferably 0.1 to 1 to 1 to 10.
5. A formulation according to Claim 3 containing:

   (a) 2 to 25 parts by weight of tebuconazole; and

   (b) 1.5 to 25 parts of weight of the crystallization inhibitor.

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